

**Poster; Presentation Award; (Submitted 19 June 2012)**

**Aspects of the Ecology and Management of Mottled Ducks in the ACE Basin, South Carolina**

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*Extended Abstract:* Mottled ducks, endemic to parts of the southern United States and Mexico, use brackish and freshwater wetlands and wet prairie habitats along the coastlines and interior regions of Florida, Alabama, Louisiana, and Texas (Stutzenbaker 1988, Johnson et al 1991). Mottled ducks were introduced to coastal South Carolina in the late 1970's. This population is apparently expanding because birds are now commonly observed in many coastal wetlands of South Carolina's Lowcountry.

Despite apparent population growth, little is known about the basic ecology of this species in South Carolina. Therefore we radio-marked 80 and 36 female mottled ducks in August 2010 and 2011, respectively and used aerial reconnaissance to monitor birds' distribution, movements, and habitat use from fall-winter each year. Initially our goal was to use radio-marked females as our sample of birds to study breeding ecology in subsequent springs. However, in 2010 we experienced significant transmitter failure during fall and winter.

Because of a lack of radio-marked females by which to study nesting ecology in spring 2011, we conducted indicated breeding pair surveys (IBPs) and located nests of non-instrumented hens in managed impoundments (Klett et al. 1986, Brasher et al 2002). We conducted IBPs from February to July from late winter-spring 2011 and 2012. We selected study wetlands by partitioning them relative to salinity levels and water management regimes to obtain a representative sample of wetlands available to breeding mottled ducks. For nest searching, we used established which included walking, use of an airboat to

search islands of habitat, and standard rope-drags across wetlands to flush incubating females from nests (Klett et al. 1986). After locating nests, we marked them, determined clutch size and incubation stage of eggs (Weller 1956), and recorded preliminary data on local vegetation and general nesting substrate. We revisited nests after estimated hatch date to determine nest fate and further described specific nest site characteristics.

In 2012, there were 9 radio-marked mottled ducks in our study area during the breeding season. We searched for possible nests of these birds and also searched for nests of unmarked females, similar to 2011. Overall, we found 42 nests of unmarked females ( $n=25$  in 2011,  $n=17$  in 2012). Apparent nest success was 32% ( $\pm 0.10$ ) in 2011 and 24% ( $\pm 0.11$ ) in 2012, and 29% overall ( $\pm 0.07$ ). Clutch size averaged 7.6 ( $\pm 0.33$ ) eggs in 2011, 9.4 in 2012 ( $\pm 0.50$ ), and 8.4 ( $\pm 0.34$ ) overall. For radio-marked females in 2012, we discovered 3 nests initiated by 2 different females, but these nests were unsuccessful; 2 were depredated and 1 was abandoned. 7 known mortalities of females radio-marked during the second year of the study occurred and apparent survival was 81 % ( $\pm 0.07$ ).

Analysis of the data is ongoing at this time. We will use program MARK to model nest success and survival probability of radio-marked females using known-fate modeling (White and Burnham 1999). We will also use Program R to plot coarse scale movements and estimate habitat use of radio-marked mottled ducks during fall-winters.

*Literature Cited:*

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